Menstrual Regulation in Family Planning Services

ELTON KESSEL, MD, MPH
WILLIAM E. BRENNER, MD
GEORGE H. STATHES, MSPH

Fertility control by means of menstrual regulation is discussed in the context of family planning programs. Its efficacy, efficiency, safety, cost-effectiveness, and acceptability are evaluated.

Introduction

Menstrual regulation (MR) is the term applied to any treatment which is administered within 14 days of a missed menstrual period* to ensure that a woman either is not pregnant or does not remain pregnant. Because pregnancy tests are not accurate at this stage of pregnancy, it cannot be reliably determined whether a woman is pregnant prior to the procedure. The most common method of treatment is vacuum aspiration using a small diameter, clear plastic, flexible cannula. Neither dilation of the cervix nor anesthesia is usually required.

Curetting the uterus for delayed periods has been performed for at least a century under the guise of "dry cupping"[1] or diagnostic endometrial biopsy to investigate amenorrhea. Many physicians have also had the experience of missing the ovum and having a pregnancy continue. Unfortunately, because these procedures were performed under guises, their effectiveness and complication rates for use in women with amenorrhea are unknown. The first systematic studies of the practicability of menstrual regulation were initiated by the International Fertility Research Program[2] in 1972.

The efficacy, efficiency, safety, cost-effectiveness, and acceptability of menstrual regulation for fertility regulation must be considered before determining its place in family planning programs.

Efficacy

Menstrual regulation by vacuum aspiration is effective. Procedure failures in six studies ranged from 0.2, to 3.6 per cent with an average of 0.7 per cent of 730 confirmed pregnant patients who continued their pregnancies after vacuum aspiration.[3,4] This is the failure rate of the procedure per confirmed pregnancy and is not comparable to life table rates which consider proportions of women experiencing MR failure over specified durations of time. It is possible to calculate life table rates for menstrual regulation for a cohort of women using menstrual regulation as their only means of contraception. Such studies are in progress.[5] However, for the same condition of no contraception, one can approximate expected failures per year per woman by multiplying the procedure failure rate (0.7 per cent or 0.007) by the mean number of times per year a group of unprotected sexually active women become pregnant, probably about twice a year for women in their thirties and three times per year for women in their

Dr. Kessel is Director of the International Fertility Research Program, Chapel Hill, North Carolina 27514. Dr. Brenner is Associate Professor, Department of Obstetrics and Gynecology, University of North Carolina at Chapel Hill. Mr. Stathes is Associate Director for Field Development, International Fertility Research Program. This work was supported in part by grants from the International Fertility Research Program of the Carolina Population Center of the University of North Carolina at Chapel Hill (AID/csd 2979). This paper was presented at the 101st Annual Meeting of the American Public Health Association, San Francisco, California, November 4—8, 1973.

* In this paper, days missed menstrual period are related to reported days amenorrhea assuming a 28-day cycle. Empirical data do not yet permit evaluation of effect of variability in length of menstrual cycle.

twenties. This rate of 1.4 to 2.1 failures per 100 years of exposure is comparable to the best contemporary contraceptives.

Effectiveness is related to training and experience. In studies[5,6] initiated when MR is first introduced as a clinic service, procedure failures are more frequent among the cases done early in the series.

Efficiency

The efficiency of menstrual regulation depends both on its failure rate and the proportion of unnecessary procedures done on nonpregnant women. Because the failure rate is so low, the major factor in determining the efficiency of the procedure is the proportion of unnecessary procedures. The proportion of women with more than 14 days amenorrhea who are pregnant appears to be influenced by their physiological, pharmacological, and pathological status as well as their length of amenorrhea. A high proportion of unnecessary procedures would be anticipated if menstrual regulation were performed in lactating women who have experienced a first postpartum menses but were again amenorrheic for physiological reasons. High rates would also be anticipated in a group of amenorrheic women who had recently discontinued oral contraceptives or were less than 16 years of age or over 50 years of age. In women with no apparent reason* for amenorrhea other than pregnancy, the proportion of them who were pregnant increased with increasing length of amenorrhea.[3] When the procedure is performed at the time of an expected menstrual period it can be estimated† that only about 19 per cent of procedures remove a fertilized ovum; that is, approximately 23 per cent for women in their twenties and 15 per cent for women in their thirties.[7] Assuming an average cycle of 28 days, for women at 8 days missed period 75 per cent of procedures remove a pregnancy and by 16 days missed period the rate is 95 per cent.[3] Thus, if menstrual regulation is utilized after 8 days of missing a menstrual period, three procedures are probably necessary per year for a sexually active women between 20 and 40 years of age to have near perfect fertility control. Efficiency is also related to safety and to cost-effectiveness.

Safety

Menstrual regulation by vacuum aspiration appears safe. With vacuum aspiration for artificial abortion, the lower the gestational age, the lower the rate of complications.[4,8] At 7 to 8 weeks gestation a 3.9 per cent complication rate is expected.[4] With outpatient menstrual regulation, performed within 6 weeks of last menstrual period, complications occurred in 1.3 per cent of 614 cases.[4] Hospitalization or additional treatment is rarely required for MR complications.

Menstrual regulation has only about 1/3 the complication rate of that associated with early first trimester abortion performed by vacuum aspiration in patients who are more than 14 days after a missed menstrual period.[4] Thus, if the probability is less than 2/3 that the patient is not pregnant, it appears to be better medical practice to evacuate the uterus on the basis of the single presumptive sign of pregnancy—amenorrhea—when the complication rates are very low, than wait for a positive pregnancy test and perform first trimester abortion when the complication rates are 3 times higher.‡

It appears that safety of the MR procedure is similar to that of an IUD insertion. If compared to this method, the need for repeated MR procedures about 3 times per year would have to be balanced against continuation rates of the IUD and the importance of its side effects in particular cultural settings.

MR's greatest contribution to safety of fertility control may be in its use to supplement safe but less effective or less effectively used contraception. Removing the risk of childbirth or late abortion after contraceptive failures could lower maternal morbidity and mortality.

Menstrual regulation is a new method of fertility regulation, and there are no studies to assess the possible serious, delayed complications, especially with repeated use of the method. Suspected delayed effects of artificial abortion by dilation and curettage are increased stillbirth[9] and prematurity[10] rates in subsequent pregnancies. If the increased rates of stillbirths result from Rh sensitization and the increased rates of prematurity are from cervical injury caused by mechanical dilation of the cervix, neither of these complications may occur with menstrual regulation. Large study populations with long term follow-up will be necessary to determine these complications.

Even among the patients not requiring the procedure for interruption of pregnancy some benefits may accrue for

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* Empirical data were gathered from service programs and selection of cases for MR procedure was not strictly on single criterion of amenorrhea, but was probably influenced by outcome of pregnancy test, history of unprotected sexual contact, regularity of menstrual periods, etc.

† In a population of women with immediate past histories of regular menses (not immediate postpartum and not lactating), it is estimated[7] that pregnancies treated by early abortion or menstrual regulation should occur twice a year for women in their thirties and three times a year for women in their twenties. If MR is done at time of expected menses or 13 times per year, then pregnancies are treated in 3/13 or 23 per cent of the procedures for women in their twenties and in 2/13 or 15 per cent of the procedures for women in their thirties.

‡ In comparing complication rates of MR and later abortion, an adjustment is needed to account for women who would have a menstrual period between the two time periods, as they are not at risk to have an induced abortion. For this comparison total MR complications per 100 documented pregnant MR cases may be compared to total later induced abortion complications per 100 induced abortion cases. No adjustment is suggested for women having spontaneous abortions between the two time periods as complications of MR and spontaneous abortions within 2 weeks of expected menses are probably similar. It is also assumed that essentially all later induced abortion cases are indeed pregnant.

these patients. All should be relieved of their anxiety related to an unwanted pregnancy. In case of amenorrhea resulting from temporary endocrine abnormalities, microscopic examination of the endometrium may allow for more specific diagnosis and treatment. Ectopic pregnancies may be diagnosed prior to rupture if products of conception are not identified in the tissue evacuated from the uterus and the pregnancy test remains positive. Although service programs may perform neither of these tests, referral centers should be available to manage patients with abnormal signs or symptoms.

Even though all of the complications of MR may not be known, patients can be assured of the relative safety and effectiveness of the procedure. They should be warned of the possible delayed complications, ectopic pregnancy, and continued intrauterine pregnancy in spite of a correctly performed menstrual regulation procedure.

Cost-Effectiveness

The cost-effectiveness of menstrual regulation in a family planning program must be evaluated in terms of the specific goals of the program. The financial cost appears relatively low when compared to artifical abortion. Menstrual regulation is safely performed on an outpatient basis in a treatment room and requires only 5 to 10 min of professional time.[3] Transportation and facilities for management of potential complications should be available within 5 min of the clinic. If MR is performed on a patient whose menstrual period is more than 14 days delayed, evacuation with 6-mm cannula may be incomplete and dilation with vacuum aspiration may be necessary. If a screening pregnancy test is negative, there is still a 30 per cent chance that the pregnancy is more than 6 weeks gestation.[11] A detailed menstrual history and a bimanual examination may assure a minimum number of cases initiated at greater than 6 menstrual weeks gestation. Except for those patients who are inadvertently initiated after 6 weeks gestation, facilities similar to those for IUD insertions are needed.

Although the procedure is usually performed by physicians, preliminary experience utilizing nurses for performing MR has been encouraging in that they do not appear to have any higher rates of failures or complications.[12] Whether paramedical personnel can perform the procedure with similar results needs evaluation, especially in areas with shortages of medical personnel.

In a public program where part of the budget is spent on recruitment of clients, a proportion of the menstrual regulation service cost might be thought of as a recruitment cost. Following MR more than 90 per cent of the patients accepted IUDs or oral contraceptives in British and American studies.[3,12]

For programs oriented toward a population policy of lowering the birth rate, the acceptance of contraception after MR is an important cost-effectiveness factor. If no contraception is used after MR, only one-third of a birth is averted by the procedure performed for a pregnant patient who does not customarily breast-feed her infant and one-fourth of a birth when lactation amenorrhea is accounted for.[7] If sterilization is accepted after MR, about one full birth is averted by the MR procedure plus an additional two to three by the sterilization procedure. There is probably no greater cost-effective fertility control for the woman under 35 who has completed her desired family size.

Some of the benefits of a family planning clinic providing menstrual regulation services are difficult to measure. The effect of early treatment of a contraceptive failure on a family planning program is one example. The rapid relief of a woman's anxiety about being pregnant during the initial clinic visit is another.

Acceptance

It is too early to accurately evaluate patient acceptance of menstrual regulation because there are more patients requiring the service than facilities to provide it. Menstrual regulation is being accepted by an increasing number of medical centers and practitioners in the U.S.A. and other countries. As a postconceptive method of fertility control, MR is likely to be used by that segment of the population not using other means of contraception, but desiring fertility control. Like abortion, if the service is available, women learn of and use the service.

Early reports from India indicate slower acceptance in a rural community clinic than urban community clinics in West Bengal.[5] In Bombay[6] a community clinic within walking distance of its population served shows greater utilization of MR services and at fewer days missed period than at a large teaching hospital clinic. It appears that in traditional societies a most important factor in acceptance of MR is the free decision of the women to use the service without delays from seeking permission of other family members. In some rural communities, this may mean having a nurse bring the MR service to the home.

Unfortunately, the service is available to relatively few patients because of the lack of facilities and practitioners trained in MR. Presently most women must wait and be aborted at later periods of gestation when maternal morbidity is higher. Because so many women are at risk of an unwanted pregnancy and women desiring MR services cannot be delayed, the facilities and number of trained physicians must be many and widespread. Although providing adequate services is an enormous task, the potential benefits to maternal health are significant and appear to warrant providing these services.

Discussion

It is unlikely that services for menstrual regulation will increase very rapidly in family planning programs because of MR's clinical nature. There is first the problem of acceptance by clinicians; second, the task of demonstrating its safety when performed by nurses or nurse-midwives; and

finally, delegation of the procedure to nonmedical personnel. A considerable training effort will be required to complete this process.

MR has potential as a separate method of fertility control or used in combination with other methods. The use of two independent methods remarkably increases efficacy as the failure rate of the combination is the product of that of the individual methods. Thus, if the failure rate of a particular method is 10 per cent and that of MR 1 per cent, the failure rate of the combination is only one-tenth of 1 per cent. Independence of failure risk can be assumed for most contraceptive methods when combined with MR. This would not be strictly true for rhythm, although MR could markedly improve its efficacy.

A shortcoming in the application of MR is that after childbirth ovulation and pregnancy may precede the first postpartum menses.[1 3]

There is a great need for more empirical data on the application of MR at different times in the menstrual cycle for different cycle lengths. This information is needed by age groups for various cultural settings, including those where lactation amenorrhea is prevalent. Even before such data are available, much could be learned from a statistical model of menstrual regulation utilizing existing knowledge of the menstrual cycle.

The long term effects of single and repeated use of MR and any rare serious complication must be constantly evaluated. Although vacuum aspiration appears relatively safe, effective, and efficient, improved methods requiring less professional supervision should be sought. The need for more information about present and improved techniques of MR will require study of this emerging family planning method.

Summary

Menstrual regulation is a safe, effective, and economical method of fertility control. Its increased safety compared to first trimester abortion establishes menstrual regulation by vacuum aspiration for treatment of up to 14 days missed menstrual period as probably better medical practice than waiting to confirm the presence of a pregnancy.

Because it is a postconceptive method, menstrual regulation has potential in family planning services both as a recruitment service and for the treatment of contraceptive failures. Its use as an only method of fertility control is being studied.

The acceptance of this new family planning service will primarily depend on its availability, dissemination of information about the service, and the ability of women freely to avail themselves of the service without delay.

Although long term effects of single and repeated use of menstrual regulation are not known, its immediate complications are few and it can be recommended as a useful addition to present fertility control methods in family planning programs.

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